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PUC DOCKET NO. 32182

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PUC INVESTIGATION OF METHODS TO IMPROVE ELECTRIC AND TELECOM INFRASTRUCTURE THAT WILL MINIMIZE LONG TERM OUTAGES AND RESTORATION COSTS ASSOCIATED WITH GULF COAST HURRICANES PUBLIC UTILITY COMMISSION OF TEXAS

AEP RESPONSE TO STAFFS REVISED "DRAFT EXECUTIVE SUMMARY AND RECOMMENDATIONS."

NOW COME Southwestern Electric Power Company (SWEPCO), AEP Texas North Company (TNC) and AEP Texas Central Company (TCC) (hereinafter referred to as "AEP" or "Companies") and file the following comments to address the recommendations made by the Public Utility Commission Staff ("Staff") in Project No. 32182 (PUC Investigation of Methods to Improve Electric and Telecom Infrastructure that will minimize Long Term Outages and Restoration Costs Associated with Gulf Coast Hurricanes).

I. Introduction

On May 10, 2006, Staff filed a "Draft Executive Summary and Recommendations" outlining measures to be taken by Transmission and Distribution Utilities (TDUs) and Telecommunication Utilities (TUs) to minimize future outages and associated restoration costs related to hurricanes. Subsequently, Staff held a workshop on May 15, 2006 to provide clarification of those recommendations and to receive oral comments. After consideration of the comments received, Staff filed a *revised* "Draft Executive Summary and Recommendations" on June 9, 2006 and held another workshop with interested parties on June 15th. AEP commends Staff for the refinements that they have incorporated in their revised draft. AEP also appreciates Staff providing parties with the opportunity to provide additional comments for further refinements, and looks forward to its continued participation in this process.

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II. Cost Recovery

In previous comments and in workshops, AEP has emphasized that the current regulatory scheme does not support timely cost recovery and that there is a real need to develop such a regulatory scheme prior to making the significant investments suggested in Staff's recommendations. In comments filed on May 30, 2006, AEP outlined in broad terms, some mechanisms for the Commission's consideration. AEP continues to urge the Commission to explore and implement a cost recovery mechanism prior to adopting any costly "infrastructure hardening" standards.

III. AEP Comments to Recommendations

Recommendation 1. Require electric and telephone utilities without a vegetation management program to develop and implement a vegetation management program for all overhead facilities/lines (structures, pole, cross arms, insulators, etc.). This program should consider the growth rates of common vegetation in the service area. Each utility should provide the Commission with the details of its existing or newly developed vegetation management program by April 1, 2007.

<u>AEP Response:</u> AEP supports Staff's Recommendation No. 1; however, the Companies recommend that the Staff delete the parenthetical insert (*structures, pole, cross arms, insulators, etc.*). The term "all overhead facilities/lines" is specific enough without further clarification, especially with terms that one might interpret as focusing only on electric utilities.

As discussed in previous comments, AEP has a vegetation management program in place and can provide the Commission with information regarding that program by the date suggested.

Recommendation 2. Require electric and telephone utilities without a cyclical groundbased facilities inspection program to develop and implement a regular, ground-based inspection cycle for all overhead facilities (structures, pole, cross arms, insulators, etc.), including a condition-based assessment of wood pole suitability for continued service. Each utility should provide the Commission with the details of its existing or newly developed facilities inspection program by April 1, 2007.

AEP Response: AEP supports Staff's Recommendation No. 2; however, is the Companies recommend that the Staff delete the parenthetical insert (*structures, pole, cross arms, insulators, etc.*). The term "all overhead facilities/lines" is specific

enough without further clarification, especially with terms that one might interpret as focusing only on electric utilities.

As discussed in previous comments, AEP has a ground-based pole inspection program in place and can provide the Commission with information regarding that program by the date suggested.

Recommendation 3. Require each electric utility to trim or remove (during the normal vegetation management cycle) all trees that are located within right of way (ROW) controlled by the utility and that compromise NESC clearance limits.

<u>AEP Response:</u> AEP suggests eliminating the reference to electric utilities in the recommendation since both electric an telecommunication utilities control ROWs that may be potentially hinder restoration and/or cause service and restoration issues. AEP believes that it is the responsibility of both the telecommunication and electric utilities to ensure that NESC clearances limits are kept.

AEP Recommended changes to Staff's proposal:

Require each electric utility and telephone utilities to trim or remove (during within the normal vegetation management cycle program) all trees that are located within right of way (ROW) controlled by the electric or telephone utility and that would compromise NESC clearance limits.

Recommendation 4. Require telecommunications utilities to ensure that all central offices in hurricane- prone areas be capable of full operation without interruption for at least 72 hours after loss of electric utility power.

AEP Response: No response.

Recommendation 5: Each electric utility should provide the Commission by August 1, 2007 with a report identifying all of the utility's transmission lines that were built to pre-1977 NESC wind loading standards. For each identified line, the report should provide the number of miles of ROW, a description of the types of structures used in the line, and an estimated cost and reasonable time required to upgrade the line to the NESC standards in effect at the time the upgrade starts. For each identified line within 10 miles of the Texas coastline, the report should include an estimated cost and reasonable time required to upgrade the line within 10 miles and the to the NESC standards in effect at the line to the NESC standards in effect at the line to the NESC standards in effect at the line to the NESC standards in effect at the line to the NESC standards in effect at the line to the NESC standards in effect at the line of the upgrading assuming 140 mile-per-hour wind speed.

<u>AEP Response</u>: From the discussions at the workshop on June 15, 2006, there is considerable confusion as to the exact requirements for what is to be provided in the

required report. Clarification needs to be provided before this recommendation can be fully evaluated. Regardless of the eventual requirements for the report, AEP has several concerns considering volume of work required due to the magnitude of transmission lines involved. With over 10,000 miles of transmission line in Texas, the process of identifying and subsequently estimating the costs to upgrade all lines that do not meet the required NESC wind loading criteria, would be major undertaking for AEP. It certainly would not be possible to complete such a task within the suggested one year. AEP requests that the Commission take into consideration some methodology for allowing the required data to be provided over a longer period of time. AEP proposes that:

- 1. An initial report be provided on August 1, 2007, and is to include the required data on all transmission lines within 10-miles of the gulf coast.
- 2. A second report be submitted by August 1, 2008, and is to include the required data on all transmission lines from 10-miles to 100-miles of the gulf coast.
- 3. A third report be submitted by August 1, 2009, and should include the required data on all transmission lines 100-miles or more from the gulf coast.

Further, Staff suggests that estimated costs be provided in the report. Typically, an estimated cost is produced by performing essentially all of the engineering details, which requires a significant investment in time and resources. In addition, the price for materials can change considerably if there is too much time lag between the development of the estimate and starting the actual construction. Instead of utilizing the estimated costs, AEP proposes that, for the purposes of the report, Staff agree to require only the approximate cost of upgrading a transmission line. Providing approximate cost figures for a particular upgrade would provide the Commission with sufficient information with which to understand the magnitude and scope of a particular transmission line upgrade.

AEP offers an alternative recommendation that would provide the Commission with sufficient information for which to understand the impacts of rebuilding portions of the Transmission infrastructure. That recommendation is as follows:

AEP Recommended changes to Staff's proposal:

In accordance with the schedule below, Eeach electric utility should provide the Commission by August 1, 2007 with a-the required reports identifying all of the utility's transmission lines that were built to pre-1977 NESC wind loading standards. For each identified line, the report should provide the number of miles of ROW transmission line, a description of the types of structures used in the line, and a nestimated reasonable approximation of the cost and reasonable time required to upgrade the line to the required NESC standards. For each identified line within 10 miles of the Texas coastline, the report should include an estimated reasonable approximation of the types of the Texas coastline, the report should include an estimated reasonable approximation of the types of the Texas coastline, the report should include an estimated reasonable approximation of the types of the Texas coastline, the report should include an estimated reasonable approximation of the types of the Texas coastline, the types time required to upgrade the line to the required NESC standards of the types cost and reasonable time report should include an estimated reasonable approximation of the types of the types cost and reasonable time required to upgrade the line to the required NESC standards of the types cost and reasonable time required to upgrade the line to the required NESC standards of the types cost and reasonable time required to upgrade the line to the required NESC standards of the types cost and reasonable time required to upgrade the line to the required NESC standards of the types cost and reasonable time types approximation of the types cost and reasonable time required to upgrade the line to the required NESC standards of the types cost and reasonable time types cost and reasonable types cost and reasonable time types cost and reasonable t

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- 2. The second report is due August 1, 2008, and is to include the required data on all transmission lines from 10-miles to 100-miles of the gulf coast.
- 3. The third report is due August 1, 2009, and should include the required data on all transmission lines 100-miles or more from the gulf coast.

Recommendation 6: Require, after January 1, 2007, all new transmission lines built within 50-miles of the Texas coastline to be prestressed concrete, steel, or other engineered products that are more resistant to high wind and deterioration than wood. Where practical, after January 1, 2007, encourage replacement (permanent) transmission structures within 50-miles of the Texas coastline to be prestressed concrete, steel, or other engineered products that are more resistant to high wind and deterioration than wood.

Require, after January 1, 2007 all new and replacement permanent transmission structures within 10 miles of the Texas coastline to be designed assuming an NESC maximum wind loading of 140 mph.

AEP Response: While AEP generally supports the utilization of pre-stressed concrete, steel, or other engineered products for all newly constructed lines within 10 miles of the gulf coast, AEP suggests that the use of wood structures not be totally eliminated for replacements and for new construction that is greater than 10-miles from the gulf coast. A total prohibition against wood poles will increase costs and could lead to more or prolonged outages on affected lines. There is no "one size fits all" structure

for transmission structures, and the delivery time to receive a replacement for a damaged structure can be considerable. The prohibition of the use of wood poles will result in uneconomical and inefficient construction and may also require the renegotiation of easements; all of which results in increased cost. For example, some of AEP's existing transmission line easements limit the type of poles that may be used to wood; therefore, a change in pole type would delay the project and necessarily involve a renegotiation of the transmission line easement. AEP suggests that staff modify their recommendation to *encourage* the use of pre-stressed concrete, steel, or other engineered products but not require that they be used.

Recommendation 7. Require each electric utility to identify and maintain records regarding each instance in which damage of transmission or distribution facilities occurred due to a weather event other than lightning. Require each electric utility to provide an annual report to the Commission that includes, for each such weather event, the date and type of weather event causing the damage, an identification and description of each facility damaged (by distribution feeder or transmission line, not by pole or structure), a description of the nature and extent of damage to each facility (feeder or line), the voltage of each facility damaged, and the approximate age (by 5-yr increments) of each facility damaged. The first report is due February 15, 2008 for calendar year 2007.

AEP Response: AEP continues to believe that this requirement places an unnecessary and reasonable burden on the electric utilities and does not provide any significant benefit for the improvement in service quality. Specifically, depending upon the final requirements, the report could even become too voluminous and/or complex to be a useful tool for any practical purpose. As stated in its comments provided to Staffs original "Draft Executive Summary and Recommendations". During a service restoration event, all resources are committed to service restoration, and currently there are no processes in place to gather the data required by this recommendation without dedicating resources that are better utilized to service restoration. Without the development and implementation of new systems to track the requested data, the reporting made under this requirement would be very subjective and inaccurate.

One possible alternative to this recommendation might be to establish some less burdensome enhancements to the reporting, already required under Substantive Rule 25.52, which would provide the Commission with additional pertinent information that they believe is necessary for monitoring purposes.

However, should the Commission decide to adopt this recommendation, it is important to note that AEP will need to make significant changes to its outage record keeping system, fund the necessary work, test the system, and train employees. AEP believes that it will take no less than one year to develop and implement this recommendation, and then it would be another year before there would be meaningful data to report. Therefore, to provide the Commission 12 months worth of data, the first report should be provided to Commission by February 15, 2009.

AEP's Recommended changes to Staff's proposal:

Require each electric <u>and telephone</u> utility to identify and maintain records regarding each instance in which damage of <u>a line</u> transmission or distribution facilities occurred due to a weather event other than lightning. Require each electric <u>and</u> <u>telephone</u> utility to provide an annual report to the Commission that includes, for each such weather event, the date and type of weather event causing the damage, an identification and description of each facility damaged (by distribution feeder or transmission line circuit, not by pole or structure), a description of the nature and extent of damage to each facility (feeder or line), the voltage of each facility damaged, and the approximate age (by 5-yr increments) of each facility damaged. The first report is due February 15, 200<u>9</u>8 for calendar year 2007<u>8</u>.

Recommendation 8. Require utilities after January 1, 2007 to design and construct all new substations that are located within a 100-yr floodplain so that the floor of the control house and all water-sensitive components of the substation operating equipment are above the elevation of the 100-yr floodplain.

AEP Response: AEP is in agreement with Staff's recommendation that all new substations built after January 1, 2007 take into consideration the 100 year flood plain as one of the criteria in designing and constructing substation facilities, provided substations that are already under design and/or construction are exempt from this criteria. However, the requirement to have all water sensitive components of the substation above that flood plain is impractical. This requirement could result in the unintended consequences of requiring the elevating of facilities to impractical

mounting heights or requiring that the substation grounds be built up to a level that causes other areas to flood. It is a more realistic and cost effective requirement to have the utility's design resist damage during occurrences of the 100-year flood. AEP suggested such a requirement in its previous comments and proposes that same language.

AEP's Recommended changes to Staff's proposal:

Require utilities to design and construct all future substations so that, water ingress to the extent of the 100-year floodplain as indicated on the current FEMA DFIRM (Digital Flood Insurance Rate Map) for that area be considered and steps taken to limit the damage to the control house and any electrical equipment in the substation so as to resist damage from accumulated water and facilitate restoration.

Recommendation 9. If new underground distribution facilities are to be installed in the rear of residential lots, require electric utilities to work with developers and homeowners to establish buffer zones of not less than 10 feet around the facilities in which no trees or structures will be placed. Such buffer zones will ensure suitable access to the facilities for any future repair work.

AEP Response: For the sake of brevity and to keep from being redundant, please see AEP's comment filed in response to Staff's first set of Draft Requirements. AEP already includes a similar requirement in the easements it secures, and most city ordinances also provide for a similar requirement; however, there is no support for the enforcement of such restrictions unless there is a specific imminent danger to public safety. A Commission mandate on this issue, without some sort of accompanying enforcement for violations, is very unlikely to produce any change, but will consume resources and add cost. AEP continues to believe that it will require a unified effort by the Commission, city, county, and state governments, as well as representatives for the developers to accomplish a reasonable change.

Recommendation 10. To the extent that it is not prohibited by city ordinance, electric utilities should encourage developers of new residential properties to utilize underground distribution facilities and express the preference to locate these facilities in front of homes or in accessible alleyways.

<u>AEP Response:</u> For the sake of brevity and to keep from being redundant, please see AEP's comments filed in response to Staff's first set of Draft Requirements. As indicated in previous comments, AEP has tried to, and continues to, gain acceptance of front of property facilities; however, this has been met with strong resistance from developers and city officials alike. AEP continues to believe that it will require a unified effort by the Commission, city, state, and county governments, as well as representatives for the developers to accomplish a reasonable change.

Recommendation 11. Staff recommends that electric utilities in Texas jointly sponsor a research project/study that evaluates the effectiveness, reasonableness and costs of retrofitting overhead distribution facilities so that, under conditions of high wind and/or ice loading, the conductors and/or support hardware will fail before the structures fail. A final project/study report, including conclusions and recommendations, should be provided to the Commission by January 1, 2007.

AEP Response: For the sake of brevity and to keep from being redundant, please see AEP's comments filed in response to Staff's first set of Draft Requirements. As stated in those comments, AEP has serious reservations about applying this unproven technology in Texas. AEP is concerned that the technology poses serious safety concerns and may have the effect of increasing the length of outages.

However, should Commission decide that such a study be performed, the time frame should be lengthened, considering that this is a relatively unknown technology and there are no current NESC standards for such facilities. AEP proposes that the study be submitted to Commission by January 1, 2008. Further, should the proposed study find that there are positive benefits to installing this technology; Commission should take into consideration the time it will take to have the necessary requirements incorporated into the NESC before requiring the TDUs to incorporate this technology into new construction.

Recommendation 12. Staff recommends initiation of a rulemaking by January 1, 2007 that directs each electric utility to conduct inspections (during the utility's regular, ground-based inspection cycle) of its distribution facilities to determine whether the amount of non-electric equipment on structures is causing an overload on those structures. The rulemaking should also direct each utility to correct all such identified overloading problems within a reasonable amount of time and to institute practices that will prevent such overloads in the future.

AEP Response: For the sake of brevity and to keep from being redundant, please see AEP's comments filed in response to Staff's first set of Draft Requirements. The adoption of this recommendation and subsequent rule would significantly increase the utilities' capital and operation and maintenance expenses while providing limited benefit to the customer. If the Commission chooses to initiate a rule, AEP recommends that cost recovery rules also be opened to address the additional cost burden this, and other recommendations will have on the TDUs.

Importantly, AEP recommends that the telephone utilities also be included in this recommendation since approximately one-half of the poles within AEP's service area, are owned by the telephone utility. Should the Commission elect to initiate such a rulemaking, the requirement should be restated as recommended below.

AEP's Recommended changes to Staff's proposal:

Staff recommends initiation of a rulemaking by January 1, 2007 that directs each electric <u>and telephone</u> utility to conduct inspections (during the utility's regular, ground-based inspection cycle) of its distribution facilities to determine whether the amount of non-electric-third-party owned equipment on structures is causing an overload on those structures. The rulemaking should also direct each utility to correct all such identified overloading problems within a reasonable amount of time, provide the utility with the necessary enforcement authority to collect the expense for the corrections from the offender, and to institute practices that will prevent such overloads in the future.

Recommendation 13. Staff recommends initiation of a rulemaking by January 1, 2007 that directs each electric and telephone utility to develop (and incorporate into its existing "pole attachment" contracts and tariffs) procedures and requirements sufficient to ensure the structural integrity of the utility's overhead facilities in situations where other parties attach cables or other facilities to the utility's overhead facilities.

AEP Response: For the sake of brevity and to keep from being redundant, please see AEP's comments filed in response to Staff's first set of Draft Requirements. Also, comments on this recommendation also parallel the comments to Recommendation No. 12.

Recommendation 14. Staff recommends that the Commission include in the Electric and Telecommunication Scope of Competition Reports a suggestion that the State Legislature explore the issue of authorizing electric utilities to trim or remove trees that are not on ROW controlled by the utility but which threaten the utility's transmission or distribution facilities.

AEP Response: AEP agrees that it will require a unified effort between the utilities,

local officials, and the law makers to be able to accomplish any substantial improvements on this issue, in addition to several of Staff's other recommendation.

Recommendation 15. Several electric utilities have embarked on projects to modernize the electric grid by deploying intelligent devices on the network. These deployments will enhance real-time monitoring of outages, selective switching of electric supply routes, and preventative maintenance of protective devices to increase the reliability of the power grid. The Commission should establish through a rulemaking incentives to encourage such deployments by electric utilities.

AEP Response: AEP continues to support this recommendation.

Dated: June 23, 2006

RESPECTFULLY SUBMITTED,

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